iMT *i-series cameras*

Features of included application software

IMTcam1.3
IMTcam3
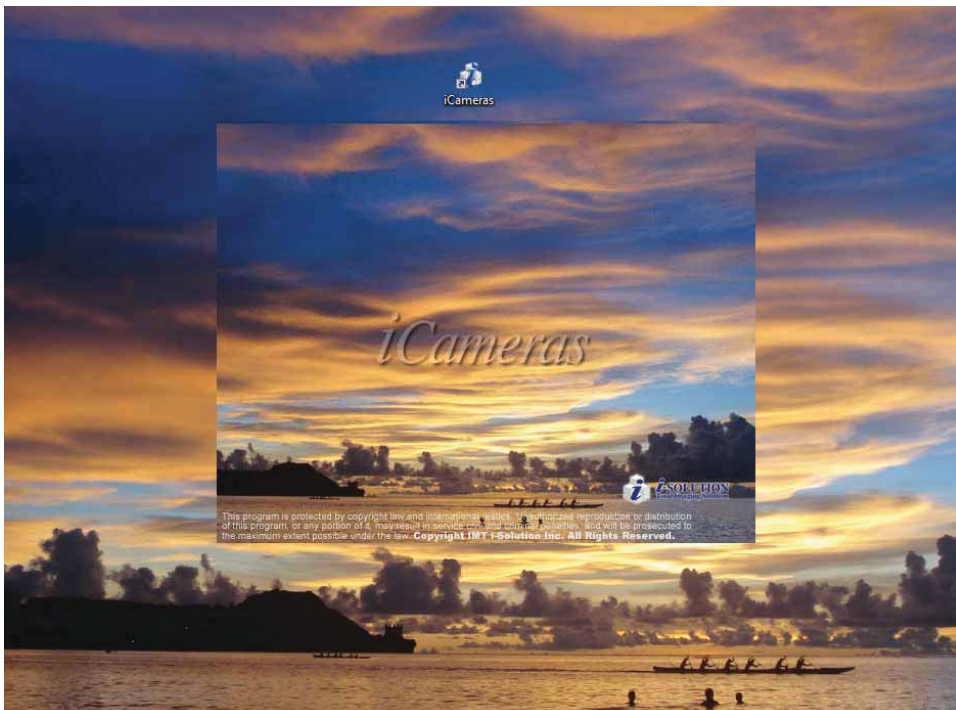**IMTcam5**
IMTcam14

Highest image quality

The high sensitivity of the color and monochrome i series CMOS and CCD Research cameras warrant brilliant images even with low-light specimens. The cooled camera models are adapted to handle mainly low-noise long-time exposures.

High speed and high resolution

The i series CMOS based USB 2.0 cameras offer rapid image refresh rates and high sensitivity for best image quality.

IMT application software

Fluorescence merging function allows several images to one composite image. There is rich list of pre-defined dyes already. One can choose desired emission wavelength in nanometers also and then correspondent color is calculated automatically.

IMTcam1.3	
Hardware Configuration	
Sensor Model	APTINA MT9T001
Scan Mode	Progressive
Max. Resolution	1280 ×1024 (Approx.1,300,000 Pixels)
Sensor Size	1/3″(4.60mm(H) ×3.70mm(V), Diagonal 5.9mm)
Pixel Size	3.6$_{\mu m}$× 3.6$_{\mu m}$
Responsivity	1.0v/lux-sec(550nm)
DynamicRange	71dB
A/D Converter	10-bit, 8-Bit R.G.B to PC
SN Ratio	44dB
Spectral Range	400-650nm (with IR-filter)
Frame Size and Rate	15fps @1280 ×1024, 26fps @640 ×512, 50fps@320 ×256 (Multiple Speed Level)
Binning	1 ×1, 2 ×2, 4 ×4
Exposure	Electronic Rolling Snap(ERS),0.140~2000ms, ROI Auto & Manual
Color Rendering Technique	Ultra FineTM Color Engine
White Balance	One Push ROI White Balance/ Manual Temp-Tint Adjustment
Interface	USB2.0

IMTcam3	
Hardware Configuration	
Sensor Model	APTINA MT9T001
Scan Mode	Progressive
Max. Resolution	2048 ×1536 (Approx.3,200,000 Pixels)
Sensor Size	1/2″(6.55mm(H) ×4.92mm(V), Diagonal 8.19mm)
Pixel Size	3.2$_{\mu m}$×3.2$_{\mu m}$
Responsivity	1.0v/lux-sec(550nm)
DynamicRange	61dB
A/D Converter	10-bit, 8-Bit R.G.B to PC
SN Ratio	43dB
Spectral Range	400-650nm (with IR-filter)
Frame Size and Rate	8fps @2048 ×1536, 22fps @1024 ×768, 43fps @680 ×510 (Multiple Speed Level)
Binning	1 ×1, 2 ×2, 3 ×3
Exposure	Electronic Rolling Snap(ERS),0.128~2000ms, ROI Auto & Manual
Color Rendering Technique	Ultra FineTM Color Engine
White Balance	One Push ROI White Balance/ Manual Temp-Tint Adjustment
Interface	USB2.0

IMTcam5	
Hardware Configuration	
Sensor Model	APTINA MT9P001
Scan Mode	Progressive
Max. Resolution	2592 ×1944 (Approx.5,040,000 Pixels)
Sensor Size	1/2.5″(5.70mm(H) ×4.28mm(V), Diagonal 7.13mm)
Pixel Size	2.2$_{\mu m}$× 2.2 $_{\mu m}$
Responsivity	0.53v/lux-sec(550nm)
DynamicRange	66.5dB
A/D Converter	12-bit, 8-Bit R.G.B to PC
SN Ratio	40.5dB
Spectral Range	400-650nm (with IR-filter)
Frame Size and Rate	5fps @2592 ×1944, 18fps @1280 ×960, 60fps @640 ×480 (Multiple Speed Level)
Binning	1 ×1, 2 ×2, 4 ×4
Exposure	Electronic Rolling Snap(ERS),0.21~2000ms,ROI Auto & Manual
Color Rendering Technique	Ultra FineTM Color Engine
White Balance	One Push ROI White Balance/ Manual Temp-Tint Adjustment
Interface	USB2.0

IMTcam14	
Hardware Configuration	
Sensor Model	APTINA MT9F001
Scan Mode	Progressive
Max. Resolution	4096 ×3288 (Approx. 14,000,000 Pixels)
Sensor Size	1/2.3″(6.138mm(H) ×4.603mm(V), Diagonal 7.672mm)
Pixel Size	1.4$_{\mu m}$×1.4$_{\mu m}$
Responsivity	0.724v/lux-sec(550nm)
DynamicRange	65.3dB
A/D Converter	12-bit, 8-Bit R.G.B to PC
SN Ratio	35.5dB
Spectral Range	400-650nm (with IR-filter)
Frame Size and Rate	1.8fps @4096 ×3288,10fps @2048 ×1644,27fps @1024 ×822 (Multiple Speed Level)
Binning	1 ×1, 2 ×2, 4 ×4
Exposure	Electronic Rolling Snap(ERS),0.4~2000ms, ROI Auto & Manual
Color Rendering Technique	Ultra FineTM Color Engine
White Balance	One Push ROI White Balance/ Manual Temp-Tint Adjustment
Interface	USB2.0

iCapture Premium

Features of included application software

IMTcam1.3
IMTcam3
IMTcam5
IMTcam14

Live image stitching

Without motorized control stage, you can have the same performance.
Simply moving X/Y manual stage by hand, you can have the same performance result. There is no need capturing images at all. All are done on Live and Manual. We think you may not believe your eyes.
Live focus enhancement: There is no need capturing images for the focus enhancement also. Clicking Live focus enhancement and then moving focus knob of a microscope is all needed. All are done on Live.

Auto and Manual Image Stitching... create a mosaic of the "Big Picture"
With our software, you can create auto and manual composites of continuously captured images in order to minimize the reduction in the field-of-view that typically comes with increased magnification.
Combined images are automatically corrected for brightness without leaving any stitching mark

Live Measurement and Overlay Settings

Users can perform measurements on the live preview image, using the crosshair or grid masks to center and count. The grid masks include calibration data. Calibration marker (scale bar) can be placed on the live preview image. The marker (scale bar) can also be burned on each captured image automatically. Any standard file format image can be chosen to see it above live preview image.

Calibration (Auto, Manual)

All measurements start with an accurate calibration. Auto, Semi-Auto calibration functions allow the software to calculate the pixels-per-unit value automatically. Only setting the unit for the calibration scale and the distance between the scale marks is needed. This feature greatly improves the accuracy and repetition of measurements. Manual calibrations are easily added and saved for recall from a drop down menu. All calibrations can be saved as files, which let the calibration be retrieved by simply opening the saved files later. Calibration can be protected by password option. Two password options, one in calibration menu itself and the other in camera resolution option, protect calibration by unexpected change. A scale bar can be permanently added to each image. Scale bar properties for color, size and text are simple to optimize for any image background.

Automatic Calibration Adjustment

By Adjust Resolution option in calibration menu, all camera capture resolution may be used regardless of the image resolution which was used for calibration. Even different cameras can be used on the basis of the same calibration. All calibration is adjusted automatically even with different camera models and captured image resolution.

One pixel control measurement for the best accuracy

Measurement accuracy is enhanced remarkably. One pixel accuracy is guaranteed.
Pointing the exact position is not easy by mouse click. By mouse drag, controlling one pixel accuracy is not possible in fact. Using keyboard arrow key, user can move the mouse point one pixel by one pixel. Zoom in window function in the View menu can be used together seeing one pixel movement. Enter key also is used for starting and completing line measurement.

Time Lapse Capture and Movie File Production

Software features a Time Lapse Capture function that supports TIF, BMP and JPG file formats. The Time Lapse Capture function also includes an Auto Save feature by yyyy / mm / dd / hour / minute / second. You can save video movie recordings in AVI, MPG, MPEG, and MOV formats.

Manual Measurement Tools - Including Various Perpendicular Distance

Software s versatile manual measurement features include tools for measuring lengths, areas, and angles and can even auto detect an object s outline and then make specified measurements. The software is equipped with a wide choice of powerful measurement tools including 3-point circle functionality, N-point circle measurement functionality, parallel line distance measurement, perpendicular distance measurement and object distance measurement. In addition, a zoom-in window can be used to determine the accurate measuring point of an object. Once you ve measured a specimen you can easily export all of the images, measurement data and statistics to an Excel file. With iSolution Lite, comprehensive statistics and data are just one effortless mouse click away.
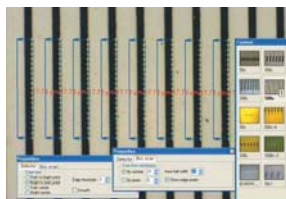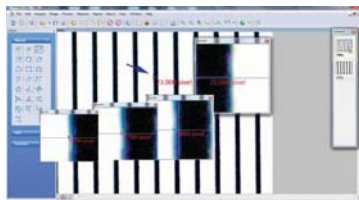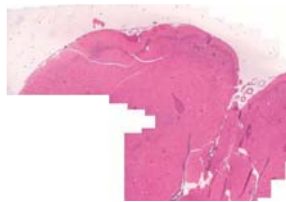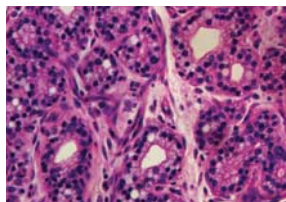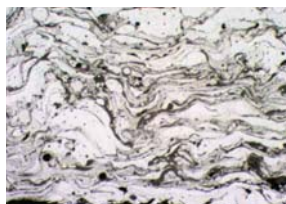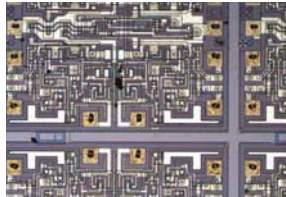
Export Into Excel - with one mouse click

A single mouse click exports the original image with measurement, calibration, annotation overlay, measurement data, statistics, and chart.

Shading Correction

The edge parts of captured image by low magnification have background shading frequently, which can be removed by the shading correction function. The color of the original image remains the same though. A standard image is acquired from a blank space on the slide glass, or from an out of focus image in a metallurgical specimen. Such a standard image is used to correct the background shading of all other captured images.

Annotation

Line, arrow, polyline, spline, rectangle, ellipse, text